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AMERICAN MATHEMATICAL SOCIETY

Notices

Edited by J. H. CURTISS

ISSUE NO. 21 *DECEMBER, 1956*

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CALENDAR OF MEETINGS

Note: This Calendar lists all of the meetings which have been approved by the Council up to the date at which this issue of the *Notices* was sent to press. The meeting dates which fall rather far in the future are subject to change. This is particularly true of the meetings to which no numbers have yet been assigned.

Meeting No.	Date	Place	Deadline for Abstracts
532	February 23, 1957	New Haven, Connecticut	Jan. 10
	April 5–6, 1957	New York, New York	Feb. 20
	April 20, 1957	Berkeley, California	
	August 26–30, 1957 (62nd Summer Meeting)	University Park, Pennsylvania	July 12
	October 26, 1957	Washington, D. C.	Sept. 12
	November, 1957	Columbia, Missouri	
	January 28–30, 1958 (64th Annual Meeting)	Cincinnati, Ohio	
	November, 1958	Evanston, Illinois	
	November, 1959	Detroit, Michigan	

SIXTY-THIRD ANNUAL MEETING

Rochester, New York

December 27–29, 1956

PROGRAM

The Sixty-third Annual Meeting of the American Mathematical Society will be held at the University of Rochester, Rochester, New York on Thursday through Saturday, December 27–29, 1956, in conjunction with a meeting of the Mathematical Association of America on Saturday, December 29, and a meeting of the Association for Symbolic Logic on Thursday, December 27.

The Thirtieth Josiah Willard Gibbs Lecture will be delivered by Professor M. H. Stone of the University of Chicago on Thursday at 8:00 P.M. in Upper Strong Auditorium. The title of the lecture is *Mathematics and the future of science.*

By invitation of the Committee to Select Hour Speakers for Annual and Summer Meetings, Professor D. C. Spencer of Princeton University will deliver an address, entitled *On complex structures,* on Thursday at 2:00 P.M. in Upper Strong Auditorium.

The award of the Cole Prize in Number Theory will be announced on Friday at 11:00 A.M. in Upper Strong Auditorium, and the recipient will deliver an address upon his investigations. This award will be followed by the Annual Business Meeting and election of officers.

Sessions for contributed papers will be held on Thursday at 10:00 A.M. and 3:15 P.M.; on Friday at 9:00 A.M. and 2:00 P.M.; on Saturday at 10:00 A.M. and 2:00 P.M.

There will be a banquet on Friday at 6:30 P.M. in the dining room of the Women's Residence Hall.

The Council of the Society will meet at 3:15 P.M. on Thursday at the Faculty Club, reconvening after dinner if necessary.

The Board of Trustees will meet at noon on Friday in the Men's Dining Hall.

The Employment Register will be maintained in the basement of the Women's Residence Hall.

REGISTRATION

Registration headquarters will be on the main floor of the Women's Residence Hall and will be open Wednesday from 4:00 P.M. to 12 Midnight, and Thursday, Friday and Saturday 8:30 A.M. to 5:00 P.M. Dormitory accommodations will be secured there too, as well as mail and general information.

ROOMS AND MEALS

Dormitory accommodations for members and guests are available in the Women's Residence Hall, beginning at 4:00 P.M. Wednesday. Single rooms are $3.50 for the first night and $2.50 each additional night, and double rooms $3.00 (per person) for the first night and $2.00 (per person) for each additional night. A reservation form is to be found on page 61, and members are requested to fill it out and return it to Professor Norman G. Gunderson, Department of Mathematics, University of Rochester, Rochester 20, New York, by December 10, or as soon thereafter as possible.

For those desiring hotel accommodations, the following hotels are listed, with rates or rate ranges for single and double rooms, respectively. In making reservations with the Manger Rochester or the Sheraton, the Society or Association should be mentioned, as these hotels have arranged special rates for members and guests.

Manger Rochester	($5.00) ($7.00–8.00)
Sheraton	($7.00) ($10.00)
Powers	($5.75–8.25) ($8.25–12.25)
Seneca	($6.00–10.75) ($8.50–14.75)

All these hotels are in downtown Rochester, three to four miles from the University Campus.

Meals will be served in the dining room of the Women's Residence Hall as follows:

Breakfasts	Thursday, Friday, Saturday, a la carte, from 7:30–9:00 A.M.
Luncheons	Thursday, Friday, Saturday, at $1.50, 12:00 noon.
Dinner	Thursday, at $2.50, 6:00 P.M.
Dinner	Saturday, buffet, a la carte, 5:30 P.M.

A banquet, to replace Friday's evening meal (see below) will cost $3.50 per person.

There will be a snack bar open in the basement of the Women's Residence Hall at hours (including evenings) which will be announced at the Registration Desk. In particular, it will be available Wednesday evening for such things as coffee, doughnuts, etc.

ENTERTAINMENT AND RECREATION

Lounges in the Women's Residence Hall will be open at all times. The Banquet will take place on Friday at 6:00 P.M. in the Women's Residence Hall Dining Room. There will be a Tea for members and guests from 4:00 to 5:30 P.M. Thursday at the Faculty Club.

There will be a conducted tour of the George Eastman House Museum of Photographic Art Friday afternoon; details will be available at Registration.

TRANSPORTATION

Rochester is situated about 80 miles east of Niagara Falls and almost on the south shore of Lake Ontario. It is served by American Airlines and Capital Air lines from the East and West, and by Mohawk Airlines locally. The airport is less than two miles from the campus; persons arriving by air would do better to take a taxi from the airport than the limousine downtown, especially if traveling in a group of two or more. Rochester is also on the direct New York Central line from New York to Detroit; the train station is about four miles from the campus. The New York State Throughway serves Rochester, and Exit 46, where the Throughway intersects Route U.S. 15, is closest to the University. Route U.S. 20 passes about twenty miles to the south of Rochester.

MAIL AND TELEGRAMS

Correspondence for those attending the meeting should be addressed in care of the American Mathematical Society, University of Rochester, Rochester 20, New York. Mail may be obtained in the Registration Area.

Reservation forms (see page 61) should be mailed as soon as possible to Professor Norman G. Gunderson, Department of Mathematics, University of Rochester, Rochester 20, New York, preferably *in time to reach Rochester* by December 10.

Committee on Arrangements:

Walter Rudin, *Chairman*	Norman Gunderson
Edward Batho	Hewitt Kenyon
Dorothy Bernstein	Robert MacDowell
H. M. Gehman	R. D. Schafer

TIME TABLE

(Eastern Standard Time)

WEDNESDAY, DECEMBER 26

4:00 P.M.–12:00 P.M. Registration, Women's Residence Hall

THURSDAY, DECEMBER 27

8:30 A.M.–5:00 P.M. Registration, Women's Residence Hall

9:00 A.M.–12:00 M. Employment Register, Women's Residence Hall

10:00 A.M. Sessions for contributed papers:
Analysis, Lower Strong Auditorium
Geometry, Dewey 114
Topology, Dewey 206

10:00 A.M. Association for Symbolic Logic, Invited Address:
G. Kreisel, Upper Strong Auditorium

11:00 A.M. Association for Symbolic Logic, Morey 305

1:00 P.M.–5:00 P.M. Employment Register, Women's Residence Hall

2:00 P.M. Invited Address: D. C. Spencer, Upper Strong Auditorium

3:15 P.M. Sessions for contributed papers:
Analysis, Lower Strong Auditorium
Applied Mathematics, Dewey 114
Topology, Dewey 206

3:15 P.M. Council meeting, Faculty Club

3:15 P.M. Association for Symbolic Logic, Morey 305

4:00 P.M.–5:30 P.M. Tea, Faculty Club

8:00 P.M. Gibbs Lecture: M. H. Stone, Upper Strong Auditorium

FRIDAY, DECEMBER 28

8:30 A.M.–5:00 P.M. Registration, Women's Residence Hall

9:00 A.M.–12:00 M. Employment Register, Women's Residence Hall

9:00 A.M. Sessions for contributed papers:
Analysis, Lower Strong Auditorium
Algebra and Theory of Numbers, Dewey 114
Geometry, Dewey 206

11:00 A.M. Award of Cole Prize in Number Theory; Annual Business Meeting, Upper Strong Auditorium

12:00 M. Board of Trustees meeting, Men's Dining Hall

1:00 P.M.–5:00 P.M. Employment Register, Women's Residence Hall

2:00 P.M. Sessions for contributed papers:
Analysis, Lower Strong Auditorium
Applied Mathematics, Lattimore 109

Algebra and Theory of Numbers, Dewey 114
Logic and Foundations, Statistics and Probability, Dewey 206

2:00 P.M. MAA Board of Governors, Welles-Brown Room of Rush Rhees Library

3:00 P.M. Tour of George Eastman House

6:30 P.M. Banquet, Women's Residence Hall

SATURDAY, DECEMBER 29

8:30 A.M.–5:00 P.M. Registration, Women's Residence Hall

9:00 A.M.–12:00 M. Employment Register, Women's Residence Hall

9:00 A.M. MAA Session, Upper Strong Auditorium
Address: A. E. Ross; Panel: C. B. Allendoerfer, R. R. Middlemiss, P. S. Jones; Retiring Presidential Address: E. J. McShane

10:00 A.M. Sessions for contributed papers:
Analysis, Lower Strong Auditorium
Algebra and Theory of numbers, Dewey 114
Topology, Dewey 206

1:00 P.M.–5:00 P.M. Employment Register, Women's Residence Hall

2:00 P.M. Sessions for contributed papers:
Analysis, Lower Strong Auditorium
Algebra and Theory of Numbers, Dewey 114
Late papers, Dewey 206

2:00 P.M. MAA Session, Upper Strong Auditorium
Annual Business Meeting; Award of Chauvenet Prize; Addresses; A. W. Tucker, J. B. Rosser, Walter Prenowitz

PROGRAM OF THE SESSIONS
(Time limit for each contributed paper, 10 minutes)

THURSDAY, 10:00 A.M.

Session on Analysis, Lower Strong Auditorium

(1) Separation and comparison theorems for differential equations of higher order
Professor A. D. Ziebur, Ohio State University

(2) Extreme eigenvalues of Toeplitz matrices
Dr. Harold Widom, Cornell University

(3) Classes of solutions of linear non-hyperbolic differential equations
Dr. Avner Friedman, University of Kansas
(Introduced by Professor Nachman Aronszajn)

(4) A Poisson formula and an extended class of functions for symmetric bounded complex domains
Dr. D. B. Lowdenslager, University of Illinois

(5) Generalized Jacobians as Radon-Nikodym integrands
Professor C. Y. Pauc, Purdue University

(6) Deficient values which are also asymptotic
Professor Albert Edrei, Syracuse University, and Professor W. H. J. Fuchs, Cornell University

(7) Improved approximations to ordinary and partial differential equations: A comparative study
Professor W. R. Mann, University of North Carolina

Session on Geometry, Dewey 114

(8) Projective geometry with homomorphism
Dr. Wilhelm Klingenberg, Institute for Advanced Study
(Introduced by Professor M. H. Heins)

(9) On the number of ordinary lines determined by n points in the plane
Mr. W. O. J. Moser, University of Saskatchewan

(10) Rotors tangent to n fixed circles
Mr. Michael Goldberg, Bureau of Ordnance, Washington, D. C.

(11) A uniqueness theorem on two-dimensional Riemannian manifolds
Professor C. C. Hsiung, Lehigh University

(12) Semi-covariants in projective differential geometry
Professor Smbat Abian, University of Tennessee, and Professor I. A. Barnett, University of Cincinnati

(13) Isometric mapping of two surfaces
Professor T. K. Pan, University of Oklahoma

(14) Spatial families of lines
Professor Andrew Sobczyk, University of Florida

(15) A projective generalization of convexity
Dr. E. J. Schweppe, University of Nebraska

(16) The use of projective coordinates in real representations of spaces of N complex dimensions
Professor J. S. Taylor, University of Pittsburgh

Session on Topology, Dewey 206

(17) Games on a compact set
Professor J. E. L. Peck and Mr. A. L. Dulmage, McGill University

(18) The group of all homeomorphisms of the universal curve
Professor R. D. Anderson, Louisiana State University

(19) Conditions under which monotone decompositions of E^3 are simply connected
Professor R. H. Bing, University of Wisconsin

(20) The space of homeomorphisms on a two-manifold
Professor Mary-Elizabeth Hamstrom and Professor Eldon Dyer, Institute for Advanced Study

(21) Extensions of a monotone mapping on a 2-sphere
Professor J. G. Hocking, Michigan State University

(22) Local contractions of continuous curves
Professor R. F. Williams, Purdue University

(23) A system of linear equations for the seven ring
Dr. R. W. Rector, Ramo-Wooldridge Corporation, Los Angeles, California
(Introduced by Professor D. M. Young, Jr.)

THURSDAY, 2:00 P.M.

General Session, Upper Strong Auditorium

On complex structures (One hour)
Professor D. C. Spencer, Princeton University

THURSDAY, 3:15 P.M.

Session on Analysis, Lower Strong Auditorium

(24) On the existence of the Stieltjes-Mean integral
Professor Pasquale Porcelli, Illinois Institute of Technology

(25) Eigenfunction expansions for a class of singular boundary value problems
Dr. F. G. Brauer, University of Chicago

(26) Mixed boundary-value problems
Professor F. E. Browder, Yale University

(27) Integration theorems for gages and duality for unimodular groups
Mr. W. F. Stinespring, University of Chicago

(28) A generalized Rellich identity
Professor L. E. Payne and Professor H. F. Weinberger, University of Maryland

(29) On the continuity and limiting values of functions
Professor I. S. Gal, Cornell University

(30) Doubly orthogonal functions
Dr. J. A. Hummel, Stanford University

Sessions on Applied Mathematics, Dewey 114

(31) Concerning the numerical solution of boundary-value problems
Dr. M. A. Hyman, Remington-Rand UNIVAC, Philadelphia, Pa.

(32) Proof of convergence of the cyclic Jacobi iterative process for computing eigenvalues of a real symmetric matrix
Professor G. E. Forsythe and Professor Peter Henrici, University of California, Los Angeles

(33) Numerical integration over the spherical shell
Professor W. H. Peirce, Michigan State University

(34) Truncation errors involved in using special difference equations. Preliminary report
Mr. R. J. Arms, U.S. Naval Proving Ground, Dahlgren, Virginia

(35) A reduced linear system from organic chemistry
Professor H. J. Ettlinger and Mr. J. L. Cornette, University of Texas

(36) Pendulum-type systems with periodic forcing
Professor George Seifert, Iowa State College of Agriculture and Mechanic Arts

(37) Comparison of the theoretical accuracy of the DTMB transport theory codes with the orthogonal polynomial approximations and the S_n-approximations
Dr. E. H. Bareiss, David Taylor Model Basin

(38) Lattice order of two-terminal resistor networks
Dr. A. B. Lehman, Massachusetts Institute of Technology

Session on Topology, Dewey 206

(39) A proof of Dehn's lemma
Dr. C. D. Papakyriakopoulos, Institute for Advanced Study

(40) On the Stone-Čech compactification of a product of two spaces
Professor Melvin Henriksen, Purdue University and the Institute for Advanced Study, and Dr. J. R. Isbell, Institute for Advanced Study

(41) Real-compact spaces (Q-spaces)
Professor Leonard Gillman, Purdue University

(42) Weak uniformities induced by families of real-valued functions
Dr. J. R. Isbell, Institute for Advanced Study

(43) Concerning real valued maps of S_n
Dr. G. R. Livesay, Cornell University

(44) 0-ideals in semi-rings and a universal compactification procedure
Professor J. G. Horne, University of Kentucky

(45) Topologies for function spaces of curves
Dr. W. F. Davison, University of Michigan

THURSDAY, 8:00 P.M.

Josiah Willard Gibbs Lecture, Upper Strong Auditorium

Mathematics and the future of science (One hour)
Professor M. H. Stone, University of Chicago

FRIDAY, 9:00 A.M.

Session on Analysis, Lower Strong Auditorium

(46) A geometric construction of the M-space conjugate to an L-space
Dr. C. C. Braunschweiger, Purdue University

(47) Function rings on the circle
Dr. John Wermer, Brown University and Institute for Advanced Study

(48) Boundary behavior of generalized analytic functions
Dr. Kenneth Hoffman, Massachusetts Institute of Technology

(49) Characterizations of reflexivity
Professor R. C. James, Haverford College

(50) The closed ideals in an algebra of analytic functions
Professor Walter Rudin, University of Rochester

(51) A duality theorem for Banach spaces with compact operator group
Dr. Karel DeLeeuw, University of Wisconsin

(52) Representation of non-normal operators
Dr. Morris Schreiber, Cornell University

Session on Algebra and Theory of Numbers, Dewey 114

(53) Group invariants and the free calculus
Dr. J. B. Kruskal, University of Wisconsin

(54) Some properties of semigroups. I
Dr. M. P. Schützenberger, Massachusetts Institute of Technology and Centre National de la Recherche Scientifique, Paris

(55) Integral representation of finite groups
PFC Walter Feit, United States Army

(56) The irreducible representations of a semigroup related to the symmetric group
Professor Edwin Hewitt and Professor H. S. Zuckerman, University of Washington

(57) Normal subgroups of monomial groups
Professor R. B. Crouch, New Mexico College of Agriculture and Mechanic Arts, and Professor W. R. Scott, University of Kansas

(58) On free groups and their automorphisms
Dr. Elvira S. Rapaport, Stockbridge, Massachusetts

(59) Groups generated by unitary reflections of period two
Professor H. S. M. Coxeter, University of Toronto

Session on Geometry, Dewey 206

(60) Repartitions on abelian varieties
Professor Iacopo Barsotti, University of Pittsburgh

(61) Cohomology groups and genera of higher dimensional fields
Professor Ernst Snapper, Miami University, Oxford, Ohio

(62) Closed, locally Euclidean, 4-dimensional manifolds
Professor Eugenio Calabi, University of Minnesota

(63) Complete and convex affine connections
Dr. Lawrence Markus, Princeton University

(64) Two Euclidean theorems, a by-product of their affine counterpart
Dr. Saly Ruth Struik, Belmont, Massachusetts

(65) On arbitrarily traversable graphs and directed graphs
Professor Frank Harary, University of Michigan

(66) Elementary linear and differential geometry in four-space
Dr. M. J. Herzberger and Dr. E. W. Marchand, Eastman Kodak Company, Rochester, New York

FRIDAY, 11:00 A.M.

Award of the Cole Prize in Number Theory; Annual Business Meeting, Upper Strong Auditorium

FRIDAY, 2:00 P.M.

Session on Analysis, Lower Strong Auditorium

(67) Variation of the branch points for an analytic function
Professor A. W. Goodman, Institute for Advanced Study and University of Kentucky

(68) On a theorem of Kubo and one of Tsuji
Sister M. Barbara Ann Foos, Nazareth College

(69) A perturbation method in conformal mapping
Professor S. E. Warschawski, University of Minnesota

(70) On the exponential representation of analytic functions with positive imaginary part in the upper half-plane
Professor Nachman Aronszajn and Professor W. F. Donoghue, University of Kansas

(71) On a problem of Hermann Weyl in the theory of singular Sturm-Liouville equations
Professor Nachman Aronszajn, University of Kansas

(72) Mandelbrojt's inequality and Dirichlet series with complex exponents
Professor T. M. Gallie, Jr., Duke University

(73) On a class of singular integral equations
Professor J. H. B. Kemperman, Purdue University

Session on Applied Mathematics, Lattimore 109

(74) Asymptotic solution of a non-homogeneous differential equation. Preliminary report
Professor R. A. Clark and Mr. W. A. Gibson, Massachusetts Institute of Technology

(75) On the application of infinite systems of ordinary differential equations to perturbations of plane Poiseuille flow
Professor C. L. Dolph, University of Michigan, and
Professor D. C. Lewis, The Johns Hopkins University

(76) An ordering principle and weak solutions of a quasi-linear partial differential equation
Professor Avron Douglis, University of Maryland and New York University

(77) Set functions on convex domains
Dr. M. I. Aissen, The Johns Hopkins University

(78) On the Mathieu transform. II
Professor W. T. Guy, University of Texas

(79) A simple proof and some extensions of the sampling theorem
Professor Emanuel Parzen, Stanford University

(80) Heat flow in a cylinder
Professor W. P. Reid, Michigan State University
(Introduced by Professor J. S. Frame)

(81) On the convergence of the Mie series for scattering by spheres
Dr. Herschel Weil, University of Michigan

Session on Algebra and Theory of Numbers, Dewey 114

(82) The nonexistence of certain finite projective planes possessing a polarity
Professor J. K. Goldhaber, Washington University

(83) Generalized incidence matrices over group algebras
Dr. D. R. Hughes, Ohio State University

(84) Loops with identities
Dr. Rafael Artzy, Israel Institute of Technology and University of Wisconsin

(85) Commutative diassociative loops. Preliminary report
Mr. J. Marshall Osborn, University of Chicago and Yale University
(Introduced by Professor A. A. Albert)

(86) On the isomorphisms of exceptional Jordan algebras
Professor A. A. Albert and Professor Nathan Jacobson, Yale University

(87) Prime ideals in nonassociative rings
Professor Bailey Brown, Amhurst College, and Professor N. H. McCoy, Smith College

(88) Obstructions to the extensions of rings
Professor Saunders MacLane, University of Chicago

(89) On injective rings
Dr. E. T. Wong, Yale University

Session on Logic and Foundations, Statistics and Probability, Dewey 206

(90) Calculus of syntactic types
Professor Joachim Lambek, McGill University

(91) Provable recursive functions. Preliminary report
Professor Hartley Rogers, Jr., Massachusetts Institute of Technology

(92) On statistics independent of sufficient statistics
Dr. A. B. Clarke, University of Michigan

(93) On stochastic approximation
Professor H. D. Block, Cornell University

(94) Integral operators and Markov chain
Dr. Shu-Teh C. Moy, Wayne State University

SATURDAY, 10:00 A.M.

Session on Analysis, Lower Strong Auditorium

(95) On a non-linear differential inequality
Professor Robert Osserman, Stanford University

(96) The fundamental solution of a linear parabolic equation containing a small parameter. Preliminary report
Dr. D. G. Aronson, University of Illinois

(97) Complex differential equations with respect to a real variable
Professor J. H. Barrett, University of Utah

(98) A unique continuation theorem for solutions of a quasi-linear biharmonic partial differential equation
Mr. R. N. Pederson, University of Minnesota

(99) Bounds of solutions of boundary problems for elliptic equations. Preliminary report
Mr. Carlo Pucci, University of Maryland
(Introduced by Professor Alexander Weinstein)

(100) Composite functions and mass distributions
Professor M. G. Arsove, University of Washington

(101) On positive-definite integral kernels and a related quadratic form
Dr. Joshua Chover, University of Wisconsin, and Dr. Jacob Feldman, Columbia University

Session on Algebra and Theory of Numbers, Dewey 114

(102) A model for the multiplicative characters of local number fields
Dr. B. M. Dwork, Harvard University

(103) Unaffected equations
Professor Shreeram Abhyankar, Columbia University

(104) Normal extensions in which every element with non-zero trace is a normal basis element
Professor C. C. Faith, Michigan State University

(105) Rings with unique addition
Professor R. E. Johnson, Smith College

(106) Hilbert's 17th problem. I
Dr. Georg Kreisel, Institute for Advanced Study

(107) On a theorem of Hölder
Mr. D. W. Miller, University of Nebraska

(108) Some extreme value results for indefinite Hermitian matrices
Dr. M. D. Marcus, National Bureau of Standards, Washington, D. C., and Professor B. N. Moyls and Mr. R. Westwick, University of British Columbia

(109) A new proof of theorems of Perron and Frobenius on positive matrices
Professor A. T. Brauer, University of North Carolina

Session on Topology, Dewey 206

(110) B-sets and fine cyclic elements
Professor C. J. Neugebauer, Purdue University

(111) A nonnormal subspace of βN
Professor Melvin Henriksen, Institute for Advanced Study and Purdue University, and Professor Meyer Jerison, Purdue University

(112) Normal bundle to a sphere in euclidean space
Dr. M. A. Kervaire, Massachusetts Institute of Technology

(113) On the normality of the product of two ordered spaces
Professor B. J. Ball, University of Virginia

(114) Linear graphs with a condition on 2-chains
Mr. D. M. Mesner, Purdue University

(115) The Pontrjagin cohomology operations and rings with divided powers
Professor P. E. Thomas, University of California, Berkeley

SATURDAY, 2:00 P.M.

Session on Analysis, Lower Strong Auditorium

(116) An area for simple surfaces
Dr. R. P. Goblirsch, University of Virginia

(117) Strong infra-(n, s)-polynomials. Preliminary report
Dr. Mishael Zedek, University of California, Berkeley

(118) Derivative manifolds in L^2 and the Hamburger moment problem
Professor D. S. Greenstein, Radio Corporation of America, Camden, New Jersey, and University of Pennsylvania

(119) Solution of the Dirichlet problem for pseudo-convex domains by plurisubharmonic functions. Preliminary report
Dr. H. J. Bremermann, Institute for Advanced Study

(120) On Erhardt Schmidt branching theory
Dr. Leon Brown, University of Minnesota and Tulane University

(121) The largest eigenvalue as a convex matrix function
Professor P. D. Lax, New York University

Session on Algebra and Theory of Numbers, Dewey 114

(122) On a Wedderburn-Artin structure theory of potent semirings. Preliminary report
Professor S. G. Bourne, Lehigh University

(123) Simply ordered ideal preserving groups. Preliminary report
Professor A. T. Butson, University of Florida

(124) A note on direct sums and direct products in completely modular complete lattices
Professor Philip Dwinger, Purdue University

(125) A note on the lattice of geometries
Dr. Juris Hartmanis, Cornell University

(126) Sums of powers of digits
Professor B. M. Stewart, Michigan State University

(127) A note on the cohomology of groups
Professor G. F. Leger, Jr., Syracuse University

(128) Torsion structure in Engel modules of arbitrary exponent
Professor R. L. Davis, University of Virginia

(129) A theorem concerning doubly stochastic matrices
Dr. T. T. Tanimoto, International Business Machines Corporation, New York, New York

General Session for Late Papers, Dewey 206

SUPPLEMENTARY PROGRAM
(To be presented by title)

(130) Some properties of the algebras of Malcev. Preliminary report
Professor A. A. Albert and Professor L. J. Paige, Yale University

(131) Semi-groups as solutions of the Schrödinger equation. Preliminary report
Mr. A. T. Bharucha-Reid, University of Oregon

(132) Discrete isoperimetric-type inequalities
Professor H. D. Block, Cornell University

(133) Estimates of error for two modifications of the Robbins-Monro stochastic approximation process
Professor H. D. Block, Cornell University

(134) Variational methods in entire functions
Professor R. P. Boas, Northwestern University, and Professor A. C. Schaeffer, University of Wisconsin

(135) Notes on polynomials defined by generating relations. I
Professor R. P. Boas, Northwestern University, and Professor R. C. Buck, University of Wisconsin

(136) Notes on polynomials defined by generating relations. II
Professor R. P. Boas, Northwestern University, and Professor R. C. Buck, University of Wisconsin

(137) Notes on polynomials defined by generating relations. III
Professor R. P. Boas, Northwestern University, and Professor R. C. Buck, University of Wisconsin

(138) Notes on polynomials defined by generating relations. IV
Professor R. P. Boas, Northwestern University, and Professor R. C. Buck, University of Wisconsin

(139) Notes on polynomials defined by generating relations. V
Professor R. P. Boas, Northwestern University, and Professor R. C. Buck, University of Wisconsin

(140) On certain free groups generated by two matrices
Mr. Bomshik Chang and Professor S. A. Jennings, University of British Columbia

(141) Integration of paths–a formal method for Lie groups
Dr. K.-T. Chen, University of Hong Kong

(142) On co-recursive orthogonal polynomials. Preliminary report
Professor T. S. Chihara, Seattle University

(143) Some theorems concerning commutative rings with unit which admit involutorial automorphisms
Professor John De Cicco, De Paul University

(144) Locally compact transformation groups
Dr. Robert Ellis, Pennsylvania State University

(145) On decompositions of certain subgroups of Abelian groups. Preliminary report
Professor C. C. Faith, Michigan State University

(146) On the values of certain sets of modules
Sister M. Barbara Ann Foos, Nazareth College

(147) A Čech theory of fundamental groups and covering-spaces
Dr. A. J. Goldman, Princeton University

(148) On a "best" 9-point difference equation analogue of Laplace's equation
Dr. Donald Greenspan, Hughes Aircraft Co., Culver City, Calif.

(149) On vertices in Euclidean 3-space
Dr. Donald Greenspan, Hughes Aircraft Co., Culver City, Calif.

(150) Weighted partitions for Hermitian matrices over a finite field
Professor J. H. Hodges, University of Buffalo

(151) Line over-relaxation for solving partial difference equations. Preliminary report
Dr. M. A. Hyman, Remington-Rand UNIVAC, Philadelphia, Pa.

(152) Finite-difference solution of the heat condition equation. (Variable time increments)
Dr. M. A. Hyman, Remington-Rand UNIVAC, Philadelphia, Pa.

(153) Asymptotic solution with respect to a parameter of ordinary linear second differential equations in a domain containing a regular singular point
Professor N. D. Kazarinoff, University of Michigan

(154) A note on Doeblin's central limit theorem
Mr. D. G Kendall, Magdalen College, Oxford University

(155) The convergence of Airy series
Professor W. J. Klimczak, Trinity College

(156) Hilbert's 17th problem. II
Dr. Georg Kreisel, Institute for Advanced Study

(157) Hypotheses on algebraically closed extensions
Dr. Georg Kreisel, Institute for Advanced Study

(158) A T-system which is not a Bernstein system
Mr. R. G. Long, University of Washington

(159) On the analyticity of the solutions of analytic, non-linear elliptic systems of partial differential equations
Professor C. B. Morrey, Jr., University of California, Berkeley

(160) On the maximum partial sums of sequences of independent random variables
Mr. R. P. Pakshirajan, Indian Statistical Institute
(Introduced by Mr. A. T. Bharucha-Reid)

(161) Application of quaternions to the representation of a binary quadratic form as a sum of four squares
Professor Gordon Pall, Illinois Institute of Technology, and Dr. Olga Taussky, National Bureau of Standards, Washington

(162) The sphere theorem
Dr. C. D. Papakyriakopoulos, Institute for Advanced Study

(163) A proof of the asphericity of knots
Dr. C. D. Papakyriakopoulos, Institute for Advanced Study

(164) A proof of Hopf's conjecture
Dr. C. D. Papakyriakopoulos, Institute for Advanced Study

(165) A study of the essential Jacobian in transformation theory
Professor P. V. Reichelderfer, Ohio State University

(166) Some properties of semigroups. II
Dr. M. P. Schützenberger, Massachusetts Institute of Technology and Centre National de la Recherche Scientifique, Paris

(167) A generalization of the Fréchet-Cramér inequality to the case of Bayes estimation
Dr M. P. Schützenberger, Massachusetts Institute of Technology and Centre National de la Recherche Scientifique, Paris

(168) An inequality for the Dirichlet integral
Professor K. T. Smith, University of Kansas

(169) Some algebraic aspects of logic
Professor M. H. Stone, University of Chicago

(170) On the solutions of nonlinear differential equations. III
Professor C.-T. Taam, Catholic University of America

(171) On a complementary energy principle
Professor Deonisie Trifan, University of Arizona

(172) Subharmonic functions and Tricomi equations
Professor Alexander Weinstein, University of Maryland

(173) On certain spaces of analytic functions
Mr. G. L. Weiss, De Paul University

(174) A note concerning an Nth order perturbed equation
Dr. J. C. Wilson, Redstone Arsenal, Huntsville, Alabama

(175) Plane parabolic functions. Preliminary report
Mr. David Zeitlin, Remington-Rand UNIVAC, St. Paul, Minnesota

R. D. Schafer
Associate Secretary

Storrs, Connecticut
November 13, 1956

PROGRAMS OF OTHER ORGANIZATIONS

SECTION A OF THE AAAS

There will be a session of Section A of the AAAS at the Christmas meeting of the AAAS in New York. At this session, T. Rado will give a vice presidential address entitled *A case history in pure mathematics.* This address will be given on December 26 at 5:00 p.m. at the McAlpin Hotel.

ASSOCIATION FOR COMPUTING MACHINERY

Christmas Meeting, 1956

Upon invitation by the American Association for the Advancement of Science, the Association for Computing Machinery is sponsoring the following session of invited papers at the Christmas meeting of the AAAS to be held December 26–31 in New York City with headquarters at the Statler Hotel. This session is to begin at 9:00 A.M., Thursday, December 27, 1956 in the Grealey Room of the Hotel Governor Clinton.

Chairman; Joseph H. Wegstein
National Bureau of Standards
Washington, D. C.

1. *Scientific problems that will require faster machines,* L. H. Thomas, Watson Scientific Computing Laboratory, Columbia University (30 minutes)
2. *Computers and pattern recognition,* O. G. Selfridge, Lincoln Laboratory, Massachusetts Institute of Technology, Lexington, Massachusetts (30 minutes)
3. *A high school digital computer program,* Aaron Buchman, Hutchinson Central Technical High School, Buffalo, New York (30 minutes)
4. *Election prediction by means of computers,* Max A. Woodbury, Research Division, College of Engineering, New York University (30 minutes)
5. *Computer research and the Atomic Energy Program,* John R. Pasta, Division of Research, Atomic Energy Commission, Washington, D. C. (30 minutes)

AMERICAN DOCUMENTATION INSTITUTE

In conjunction with the AAAS Christmas 1956 meeting in New York, the American Documentation Institute is holding a session on *Language, Logic, and Logistics of Documentation* on December 28 P.M., and two

sessions of contributed papers on December 29 A.M. Furthermore the Institute, with the co-sponsorship of the Association for Computing Machinery, has arranged a panel discussion on *Changing Patterns of Information Organization,* concerned with the interaction of conventional and machine classification theory and practice, on December 29, 2 P.M., at the Governor Clinton Hotel.

NEWS ITEMS AND ANNOUNCEMENTS

GENERAL ORDERING OF NEWS ITEMS AND ANNOUNCEMENTS. In each issue of the *Notices*, the items appearing in this department are arranged as to subject in accordance with the following schedule:

1. Fellowships, scholarships, research associateships, and other financial aid opportunities.

2. Institutes and symposia with stipends and/or expense allowances, with applications broadly invited.

3. Announcements of research grants already made.

4. Activities of other mathematical associations. (Programs of future meetings are in a separate department of the *Notices*.)

5. Announcements of future conferences and institutes with restricted attendance and open by invitation only.

6. Reports of past conferences, institutes, etc.

7. Publications (special announcements).

8. Acknowledgments of editors to referees.

9. Special reports.

BENJAMIN PEIRCE INSTRUCTORSHIP AT HARVARD. There will be one or more Benjamin Peirce Instructorships open next year at Harvard. The base salary for this post-doctoral instructorship is $4,500. It can be augmented by summer work or research contracts and by teaching in summer school. The teaching commitment is six hours one semester and nine hours the other, and includes the option of an advanced half-course of the instructor's own choosing. The appointments are annual, but carry a presumption of two renewals.

Application should be made to the Harvard Mathematics Department before February 1, and should be seconded by three supporting letters.

C. L. E. MOORE INSTRUCTORSHIPS IN MATHEMATICS FOR 1957-1958. The Department of Mathematics at the Massachusetts Institute of Technology wishes to announce the availability of C. L. E. Moore Instructorships in Mathematics for 1957-58, open to young mathematicians with doctorates who show definite promise in research. Applications should be filed not later than January 24, 1957 on forms obtained from the Department.

GRANTS-IN-AID OF THE INSTITUTE FOR ADVANCED STUDY. The School of Mathematics of the Institute for Advanced Study will allocate a small number of grants-in-aid to gifted young mathematicians and

theoretical physicists to enable them to study and to do research work at Princeton during the academic year 1957-58. Candidates must have given evidence of ability in research comparable at least with that expected for the degree of Doctor of Philosophy. Blanks for application may be obtained from the School of Mathematics, Institute for Advanced Study, Princeton, New Jersey, and are returnable by January 1, 1957.

A NEW NATIONAL SCIENCE FOUNDATION PROGRAM OF SCIENCE FACULTY FELLOWSHIPS. The National Science Foundation has announced that applications will be accepted for a new program of Science Faculty fellowship awards. The fellowships are offered as a means of improving the teaching of science, mathematics and engineering in American colleges and universities. The primary purpose of these awards is to provide an opportunity for college and university science teachers to enhance their effectiveness as teachers. Fellowships are offered for study in the mathematical, physical, medical, biological, engineering and other sciences. Approximately 100 awards will be announced on March 20, 1957.

Science faculty fellowships are available to any citizen of the United States who holds a baccalaureate degree or its equivalent, has demonstrated ability and special aptitude for science teaching and advanced training, has taught at the collegiate level as a full-time faculty member for not less than three years, and intends to continue teaching.

Stipends will be individually computed in such a way as to match as closely as possible the regular salary of recipients. In the event that a recipient has supplemental support during his tenure, the amount of his award will be reduced accordingly. The Foundation's award will be adjusted so that in no case will the combined support—from the Foundation and other sources—exceed $10,000 per annum. Additionally, allowances will normally be made to assist in defraying costs of travel and certain other expenses associated with the fellowship study.

Fellows may study at any accredited nonprofit institution of higher education in the United States or similar institution abroad approved by the Foundation. Tenures of three to fifteen months are available.

Selection will be based on letters of recommendation, academic records, and other appropriate evidences of professional activity and competence. Applicants' qualifications will be evaluated by panels of persons especially competent to make judgments as to the demonstrated and potential ability of an applicant as a teacher of science.

Application materials may be obtained from the Division of Scientific Personnel and Education, National Science Foundation, Washington

25, D. C. Completed materials must be received not later than January 14, 1957. Selections will be announced on March 20, 1957.

EMPLOYMENT LISTING FOR RETIRED MATHEMATICIANS. Mathematicians, either retired or about to retire, who have taught at colleges or universities and will be available next year for employment as teachers or as mathematicians in industry, are invited to be listed without charge by the Mathematical Sciences Employment Register Committee, sponsored jointly by the American Mathematical Society, the Mathematical Association of America, and the Society for Industrial and Applied Mathematics. Before January 31, they should send to the committee chairman, Professor J. S. Frame, Mathematics Department, Michigan State University, East Lansing, Michigan, the following information: Name, date of birth, highest degree and where obtained, most recent teaching position or employment, present address, and date available. They should indicate availability for academic or industrial employment or both, and mention geographical or other preferences.

After February 15, interested employers may obtain a copy of this list of available retired mathematicians by writing Professor Frame, enclosing a self-addressed stamped envelope.

TRAINING PROGRAM IN NUMERICAL ANALYSIS FOR SENIOR UNIVERSITY STAFF. The National Bureau of Standards and the National Science Foundation are planning to hold at the Bureau a training program in numerical analysis for senior university staff.

The purpose of this program is to give members of university staffs who have heretofore specialized in fields different from numerical analysis a training in that field which will enable them to direct the operation of university computing centers, and to organize training and research in numerical analysis on their return to their own institutions. The program will occupy the whole of the second semester of the academic year 1956-1957 (from February 11 to June 9) and has been arranged at that time so that participants may get familiar with the details of their own computing equipment during the summer and be able to conduct courses in the academic year 1957–1958.

Details of the program are available upon application to the Applied Mathematics Division of the National Bureau of Standards. The number of participants will be limited to 12. Grants will be made to the parent institution of one half the individual's salary, and the whole of his travel expenses and subsistence.

As suggested in the first sentence of this item, a final decision on

this program has not been made. However, in view of the short time for the selection of candidates and consequent rearrangement of teaching schedules, it is felt that this preliminary announcement might serve a useful purpose in alerting those who might be interested in such a program.

A SUMMER SEMINAR IN APPLIED MATHEMATICS (Preliminary Announcement). The American Mathematical Society and the University of Colorado, with the sponsorship of the Air Force Office of Scientific Research, the Atomic Energy Commission, the National Science Foundation, the Office of Naval Research, and the Office of Ordnance Research, U.S. Army, announce a Seminar in Applied Mathematics to be held at the University of Colorado, Boulder, Colorado, in the summer of 1957. Initial plans for a Seminar in Applied Mathematics were drawn up in 1955 by an informal planning committee consisting of J. H. Curtiss, H. J. Greenberg, A. S. Householder, H. W. Kuhn, and J. B. Rosser (Chairman).

The Seminar will start Monday, June 24 and will end Friday, July 19, 1957. There will be no sessions on July 4; instead these sessions will be held on July 6.

The purpose of the Seminar is primarily instructional, with emphasis on a number of carefully prepared basic courses. Lectures on selected topics given by outstanding scientists are an added feature.

While the lectures will be pitched at an advanced level of general mathematical maturity (that indicated by the attainment of the Ph.D. degree or its equivalent will probably be necessary for maximum benefit from the Seminar) they will be integrated and self-contained, and designed to open up their subjects. An opportunity will be given to pure mathematicians and scientists from other fields to familiarize themselves with major sectors of modern applied mathematics, and thereby respond to the increasing need for people versed in these fields. At the same time the Seminar will offer applied mathematical specialists an opportunity to catch up on progress in related fields and to acquire new interests.

The program will be as follows:

Basic Courses

Topic	Lecturer	Time
I. Solid mechanics	R. S. Rivlin	MWF. 8:30– 9:30 AM.
II. Fluid mechanics	Sydney Goldstein	MWF. 9:45–10:45 AM.
III. Probability and related topics in physical sciences	Mark Kac	MWF. 11:00–12:00 AM.
IV. Partial differential equations (including numerical methods)		

Topic	Lecturer	Time
a) Hyperbolic and parabolic	Fritz John	TTh. 8:30– 9:30 AM.
b) Elliptic	Lipman Bers	TTh. 9:45–10:45 AM.

Special Lectures

A number of special lectures will be held to supplement the basic courses. They will form an integral part of the Seminar for they have been worked out in close collaboration with the lecturers in the basic courses, to illuminate the various courses, and to deepen the understanding of them.

To date arrangements have been completed for the following special lectures:

Title	Lecturer
1. The Boltzmann Equation (two lectures)	G. E. Uhlenbeck
2. Plasticity (two lectures)	William Prager
3. Magnetogasdynamics (two lectures)	J. M. Burgers
4. Boundary Value Problems for Operators of Parabolic Type	A. N. Milgram

Additional lectures in differential equations are planned.

With few exceptions, no formal lectures are scheduled in the afternoons. The Program Committee has kept this time free purposely, believing that an opportunity for the participants to engage in free discussion in small informal groups among themselves and with the distinguished speakers on the program may prove to be one of the lasting benefits to be gained from the Seminar. No academic credit will be granted and there are no tuition charges, but there may be a nominal registration fee.

The dormitories and dining facilities of the University of Colorado will be available to participants in the Seminar and their families.

Application For Admission; Financial Assistance

Application blanks for admission to the Seminar may be obtained from and, after completion, should be directed to:

Professor R. E. Langer, Chairman, Subcommittee on Admissions and Assistance, Department of Mathematics, University of Wisconsin, Madison 6, Wisconsin.

In view of limited accommodations, the committee requests that application blanks reach Professor Langer by January 31, 1957.

Space is provided on the application blank for those who wish to apply for financial assistance, as a limited amount of financial help may be available from funds supplied the Society by sponsors to defray the expenses of deserving persons otherwise unable to attend. Those who

can make other arrangements (for example, from research contracts) for the reimbursement of their expenses would not be expected to apply for financial help from the Society.

A detailed announcement (covering registration, rooms and meals, entertainment and recreation, transportation, mail and telegrams) will appear later with the final program.

The Program Committee for the Summer Seminar is as follows: P. R. Garabedian, A. S. Householder, M. Kac, R. E. Langer, C. C. Lin, W. Prager, J. J. Stoker, and M. H. Martin, Chairman.

SUMMER INSTITUTE ON MATHEMATICS IN SOCIAL SCIENCE. The Social Science Research Council, with the co-sponsorship of the Mathematical Association of America, has announced that a summer institute on mathematics and social science for college teachers of mathematics will be held at Stanford University, California, June 24–August 17, 1957. The program of the institute will include formal lectures, seminar discussions, and workshops. One series of lectures will concern applications of mathematics in economics, psychology, social psychology, and sociology; there will be another series of lectures on mathematical topics particularly relevant to social science, such as set theory, axiomatics, linear programming, and theory of games. Seminar groups will give intensive study to selected areas of contemporary social science research which involve new applications of mathematics. The ultimate purpose of the Institute is to increase the participation of mathematics teachers and hence also of their students in the intelligent application of mathematics in the social sciences.

The Institute will be directed by Professor Robert M. Thrall of the University of Michigan Department of Mathematics. Other regular staff members will be William K. Estes, Professor of Psychology, Indiana University; Tjalling C. Koopmans, Professor of Economics, Yale University; and R. Duncan Luce, Assistant Professor of Mathematical Statistics and Sociology, Columbia University. Short series of lectures will also be given by Albert W. Tucker, Professor of Mathematics, Princeton University, and by John G. Kemeney, Professor of Mathematics, Dartmouth College. Other visiting lecturers will present special topics.

Another institute on applications of mathematics, for social scientists, will be held concurrently at the same place under the Council's sponsorship. While the two institutes will be conducted separately, staff members of the other institute will be among the visiting lecturers at the institute for mathematics teachers.

Enrollment will be limited to about 40 college mathematics teachers.

No tuition fee will be charged. Participants whose expenses are not paid by their own institutions may receive stipends from the Council to meet in part the cost of attendance. Subject to the limitation of available funds, stipends are expected to range from $400 to about $1,000, varying somewhat according to academic status, number of dependents, and distance to be traveled. Applicants should be mature mathematicians but need not have had previous training in social science.

Applications for admission, on forms which will be supplied to individuals on request, will be due not later than January 7, 1957. Candidates will be notified of the selection committee's action on or before March 1, 1957. Requests for application forms should be addressed to the Social Science Research Council, 726 Jackson Place, N. W., Washington 6, D.C. Inquiries concerning the program of the Institute should be addressed to Professor Robert M. Thrall, Department of Mathematics, University of Michigan, Ann Arbor, Michigan.

ANNOUNCEMENT OF THE AWARD OF NATIONAL SCIENCE FOUNDATION POSTDOCTORAL FELLOWSHIPS IN SCIENCE. The National Science Foundation has announced the award of 50 postdoctoral fellowships for advanced study and research in the natural sciences, under a second award for postdoctoral fellowships. Of these, 25 were senior postdoctoral fellowships, awarded to individuals who have held the doctoral degree for five years and have demonstrated unusual ability and special aptitude for productive scholarship in the sciences. The remaining 25 awards were made in the Foundation's regular postdoctoral fellowship program, primarily to recent recipients of the doctoral degree.

This announcement was dated October 16, 1956. The fellowships were in addition to 895 fellowships awarded by the Foundation in March, 1956.

Of the 50 new awards, 22 were in the life sciences, 10 in chemistry, 10 in physics, 4 in mathematics, 2 in earth sciences, one in engineering, and "one in the area of convergence between the natural and social sciences".

Senior postdoctoral fellowships carry stipends which are adjusted so as to approximate the regular salaries of the award recipients. The regular postdoctoral fellowships carry a stipend of $3,400 with additional allowances for dependents, tuition, and other normal expenses.

The National Science Foundation has reopened its senior postdoctoral program and its regular predoctoral and postdoctoral fellowship program for additional awards to be made for the academic year 1957–1958 to be made in March, 1957. The fact was announced in the October, 1956 issue of the *Notices*.

Applications for the 1957–1958 fellowships may be obtained from the Fellowship Office, National Academy of Sciences-National Research Council, 2101 Constitution Avenue, N. W., Washington 25, D. C. The closing dates for receiving of applications are December 24, 1956 for postdoctoral applicants, and January 7, 1957 for graduate students working toward advanced degrees in science.

TERMS OF THE RECIPROCITY AGREEMENT BETWEEN THE AMERICAN MATHEMATICAL SOCIETY AND THE INDIAN MATHEMATICAL SOCIETY. Some three years ago, the American Mathematical Society concluded a reciprocity agreement with the Indian Mathematical Society. As stated in the October *Notices*, the necessary business arrangements will henceforth be made through the Headquarters Offices of the Society. Individual members of the American Mathematical Society who join the Indian Mathematical Society under this reciprocity agreement pay dues to the latter Society of $1.75 per year. They receive the two publications of the Indian Mathematical Society, the *Journal of the Indian Mathematical Society* and the *Mathematics Student*. Any member of the American Mathematical Society who wishes to join the Indian Mathematical Society under this agreement should send his name, his mailing address, and a check for $1.75 to the Headquarters Offices of the Society. Checks should be made payable to the American Mathematical Society. (There are no formal application blanks.) Subscriptions will begin with the year 1957 unless otherwise requested.

Although residents of India can get a reduction of 50% on AMS dues whether they pay through the Indian Mathematical Society or directly to the Society, residents of North America can get a reduction of dues to the Indian Mathematical Society to the amount mentioned above only if they send their dues to the AMS. The reason is that the North American dues are needed to provide a dollar source for the Indian Mathematical Society.

The reader will notice that the amount of the reciprocity dues of North Americans to the Indian Mathematical Society is just one fourth the amount of the reciprocity dues of Indians to the American Mathematical Society. Therefore to make the arrangement work out satisfactorily, we need to have four times as many American members to the Indian Mathematical Society as Indian members (paying through this channel) to the American Mathematical Society. At present we are somewhat short of the goal.

Members of our Society are urged to consider becoming members of the Indian Mathematical Society through this arrangement. The journal privileges are extraordinarily valuable in relation to the cost, and there

is the further advantage of knowing that one is helping to make this arrangement workable.

RECIPROCITY AGREEMENT WITH THE SOCIÉTÉ MATHÉMATIQUE DE FRANCE. This agreement was referred to along with the agreement with the Indian Mathematical Society, in the October issue of the *Notices*. As stated in that issue, the necessary business arrangements in connection with this reciprocity agreement will henceforth be made through the Headquarters Offices of the Society. Individual members of the Société Mathématique de France may join the American Mathematical Society under the reciprocity agreement by paying dues of $7.00. *Until further notice* (a new agreement is being discussed) individual members of the American Mathematical Society may join the Société Mathématique de France by paying dues of $2.00. They will receive the *Bulletin of the Société Mathématique de France* and announcements of the meetings of the Société. Any member of the American Mathematical Society who wishes to take advantage of this arrangement should send his name, his mailing address, and a check for $2.00 to the Headquarters Offices of the American Mathematical Society. Checks should be made payable to the American Mathematical Society. There are no formal application blanks.

Members of the American Mathematical Society can get a reduction of dues to the Société Mathématique de France to the amount mentioned above only if they send their dues to the American Mathematical Society. This is to provide a dollar source for the Société Mathématique de France.

A CONFERENCE ON THE THEORY OF ANALYTIC FUNCTIONS (of one or more complex variables) will be held at the Institute for Advanced Study at Princeton, New Jersey from September 1 to September 14, of 1957. Lectures and seminars will run from Monday, September 2nd through Friday, September 6th, and from Monday, September 9th through Friday, September 13th.

There will be a small number of principal hour addresses. In addition several seminars will be conducted each day at different hours in the following fields:

1. Theory of Functions of Several Complex Variables
2. Conformal Mapping and Schlicht Functions
3. Riemann Surfaces
4. Theory of Automorphic Functions
5. Analytic Functions as Related to Banach Algebras.

Membership in the Conference is by invitation. About sixty mathema-

ticians have been invited, including about 25 from foreign countries. The Conference is financially supported by the Air Force Office of Scientific Research under a contract with the Institute for Advanced Study. The Committee in charge of the Conference is composed of Professor Marston Morse, Chairman, Professor Arne Beurling, Professor Atle Selberg.

The papers presented at the seminars will be reproduced and will become available for limited distribution. The principal hour addresses will appear in book form in the Princeton Series and will be on sale at the Princeton University Press, Princeton, New Jersey.

The Secretary of the Conference is Mrs. Joan Slotnick, Fuld Hall, The Institute for Advanced Study, Princeton, New Jersey.

COLLOQUIUM PUBLICATIONS VOLUME 37, *STRUCTURE OF RINGS*, by Nathan Jacobson, is now available. The list price is $7.70, or $5.78 for members. In his preface, the author points out that a number of important developments have recently taken place in the theory of non-commutative rings. These include the structure theory of rings without finiteness assumptions, cohomology of algebras, and structure and representation theory of non-semi-simple rings. The main purpose of the present volume is to give an account of the first of these developments.

The author goes on to say that the tools which have been devised for the study of general rings yield improved proofs of the older structure results on rings with minimum condition and of finite dimensional algebras. The author has therefore presented the specialization of the general results and methods to these classical cases. He points out that the passage to the more general case not only gives a better insight into the classical results, but also provides a theory which is applicable to a number of important new classes of rings, including the primitive rings with minimal ideals, algebraic algebras and algebras with a polynomial identity.

The starting point of his considerations is the definition of a radical for an arbitrary ring. An attempt was made to make the presentations self-contained and give complete proofs, particularly in the basic results. The only knowledge assumed is that of the rudiments of rings module theory such as is found in any of the introductory texts to abstract algebra.

A NEW MEMOIR. Memoirs No. 21, *Theory of distributions for locally compact spaces*, by Leon Ehrenpreis is now available. The price is $1.70 list and $1.28 to members. The author has submitted the following descrip-

tion of this Memoir:

The theory of distributions of L. Schwartz may be regarded as a study of the operators $\partial/\partial x_j$ on Euclidean space. The purpose of our Memoir is to show in what manner the methods of Schwartz can be extended to a much more general class of linear functional operators which act on functions defined on a locally compact space R. If R is a Euclidean space then, roughly speaking, the operators D we consider are those for which we can find an $m > 0$ so that $Df(x_0)$ depends only on the values of f in the sphere, center x_0, radius m. In particular, D can be any linear differential-difference operator. In case R is the integral points on the line, then the operators we consider can be represented by matrices whose non-vanishing terms lie "close to" the diagonal, e.g., the representation of x or d/dx by Hermite functions.

For our operators we define spaces of functions and distributions in a method analogous to that of Schwartz. Many of the properties of the distributions of Schwartz can be generalized, but a great many anomalies appear in our theory.

A LIST OF CHAIRMEN OF DEPARTMENTS OF MATHEMATICS has been compiled and is now available upon request at the Headquarters Offices of the Society at 190 Hope Street, Providence 6, Rhode Island.

VISITING FOREIGN MATHEMATICIANS. The following list of visiting foreign mathematicians has been prepared by the Division of Mathematics of the National Academy of Sciences–National Research Council. This list is dated October 18, 1956.

Name	Home Country	Host Institution	Period of visit From	To
ARTZY, Rafael	Israel	University of Wisconsin	Sept. 1956	June 1957
ATIYAH, Michael Francis	U. K.	Institute for Advanced Study	Sept. 22, 1955	April 1957
AZUMAYA, Goro	Japan	Yale University	Sept. 1956	June 1957
BARRATT, Michael	U. K.	Princeton University	Academic year 1956–1957	
BERGER, Marcel	France	Massachusetts Institute of Technology	Sept. 15, 1956	June 15, 1957

Name	Home Country	Host Institution	Period of visit From	To
BREMERMANN, Hans Joachim	Germany	Institute for Advanced Study	Sept. 20, 1955	April 1957
BURROW, Martin	Canada	Institute of Mathematical Sciences, N. Y. University	Sept. 1956	June 1957
CHAK, A. M.	India	Duke University	Sept. 1956	May 1957
DeBOER, Jan H.	Netherlands	Harvard University	Nov. 1955	Nov. 1957
DELANGE, Hubert	France	Institute for Advanced Study	Sept. 1956	Dec. 1956
DOLD, Albrecht	Germany	Institute for Advanced Study	Sept. 1956	July 1957
EDWARDS, David A.	England	Yale University	Sept. 1956	June 1957
ELLIS, Hubert W.	Canada	Institute for Advanced Study	Sept. 1956	July 1957
FESTA, Rudolf	Austria	University of Alabama	Academic year 1956–1957	
FRIEDMAN, Avner	Israel	University of Kansas	Sept. 1956	June 1957
FROELICHER, Alfred V.	Switzerland	Institute for Advanced Study	Sept. 24, 1955	April 1957
GÅRDING, Lars	Sweden	University of Chicago	Jan. 1, 1957	June 30, 1957
GAUTSCHI, Walter	Switzerland	Massachusetts Institute of Technology (Oct. 1955–Sept. 1956); American University; National Bureau of Standards (Sept. 26, 1956–Sept. 1957)	Oct. 1955	Sept. 1957
GHASSARI, A.	Iran	American University; National Bureau of Standards	Sept. 1956	Sept. 1958
GRIFFITHS, Hubert B.	U. K.	Institute for Advanced Study	Sept. 1956	July 1957

Name	Home Country	Host Institution	Period of visit From	To
GRUENBERG, K.	England	Harvard University (1955–56); Institute for Advanced Study (1956–57)	Sept. 1955	June 1957
HEJTMANEK, Johann	Austria	Ohio State University	Academic year 1956–1957	
HELLMAN, Olavi B.	Finland	University of California, Los Angeles	Academic year 1956–1957	
HELMBERG, Gilbert	Austria	University of Washington	Oct. 1, 1956	June 15, 1957
HORMANDER, Lars	Sweden	University of Chicago (Jan. 1956–June 1956); Institute of Mathematical Sciences, N. Y. University (Sept. 1956–Jan. 1957)	Jan. 1, 1956	Jan. 1957
JAIN, M. K.	India	University of Maryland	Jan. 1, 1957	June 30, 1957
Jorgens, Konrad	Germany	Institute of Mathematical Sciences, N. Y. University	Sept. 1956	Feb. 1957
KERVAIRE, M. A.	Switzerland	Massachusetts Institute of Technology	Sept. 15, 1956	June 15, 1957
KLINGENBERG, Wilhelm	Germany	Institute for Advanced Study	Sept. 1956	April 1957
KNESER, Martin	Germany	Institute of Mathematical Sciences, N. Y. University	Sept. 1956	Sept. 1957
KOBAYASHI, Shoshichi	Japan	Institute for Advanced Study	Oct. 1956	April 1957
KREISEL, Georg	U. K.	Institute for Advanced Study	Oct. 16, 1955	April 1957
KRICKEBERG, Klaus	Germany	University of Illinois (1955–56); University of Wisconsin (1956–57)	July 1, 1956	June 30, 1957
KURANISHI, Masatake	Japan	Institute for Advanced Study (1954-55); University of Chicago (1956-57)	Oct 1, 1956	Sept. 30, 1957

Name	Home Country	Host Institution	Period of visit From	To
KURODA, Sigekatu	Japan	Institute for Advanced Study	Jan. 18, 1955	Dec. 1956
LAASONEN, V. Pentti J.	Finland	University of California, Los Angeles	Academic year 1956–1957	
LELONG, Jacqueline	France	Institute for Advanced Study	Sept. 1956	Dec. 1956
LELONG, Pierre	France	Institute for Advanced Study	Sept. 1956	Dec. 1956
LEOPOLDT, Heinrich W.	Germany	Institute for Advanced Study	Sept. 1956	April 1957
LERAY, Jean	France	Institute for Advanced Study	Sept. 1956	Dec. 1956
LYTTKENS, S.	Sweden	Harvard University	Sept. 1956	March 1957
MATSUSAKA, Teruhisa	Japan	University of Chicago	Sept. 3, 1954	Sept. 1957
MILNE-THOMSON, L. M.	U. K.	Brown University	Sept. 1956	June 1957
NAKANO, Shigeo	Japan	Institute for Advanced Study	Sept. 22, 1955	April 1957
NEF, Walter	Switzerland	American University; National Bureau of Standards	Oct. 12, 1956	March 1957
PAPAKYRIAKOPOULOS, Christos D.	Greece	Institute for Advanced Study	June 3, 1955	April 1957
PARKUS, Henry	Austria	Michigan State University	April 1957	Aug. 1957
PAUC, Christian Y.	France	University of Missouri	Nov. 1956	-- 1957
PICONE, M.	Italy	University of Maryland	Dec. 15, 1956	June 30, 1957
PITMAN, Edwin James G.	Australia	Stanford University	Academic year 1956–1957	
PUCCI, Carlo	Italy	University of Maryland	Sept. 1, 1956	June 30, 1957

Name	Home Country	Host Institute	Period of visit From	To
RAGAB, Fouad M.	Egypt	Institute for Advanced Study	Sept. 1956	April 1957
RHEIMBOLDT,	Germany	University of Maryland	Sept. 1, 1956	June 30, 1957
RHODES, Frank	U. K.	Institute for Advanced Study	Sept. 1956	April 1957
RIESZ, M.	Sweden	University of Maryland	Oct. 15, 1956	Jan. 31, 1957
ROELCKE, Walter O. P.	Germany	Institute for Advanced Study	Sept. 22, 1956	April 1957
ROTH, K. F.	England	Massachusetts Institute of Technology	Sept. 15, 1956	June 15, 1957
SCHNEIDER, Hans	U. K.	State College of Washington	July 1956	-- 1957
SCHULTZ-GRUNOW,	Germany	American University; National Bureau of Standards	Oct. 22, 1956	Dec. 22, 1957
SERRE, Jean-Pierre	France	Institute for Advanced Study	Sept. 1955	Dec. 1956
STUART, J. T.	U. K.	Massachusetts Institute of Technology	Sept. 15, 1956	June 15, 1957
SUZUKI, Michio	Japan	Harvard University	Sept. 1956	June 1957
TAMAGAWA, Tsuneo	Japan	Institute for Advanced Study	Sept. 18, 1955	July 1957
TAMURA, Takayuki	Japan	Tulane University	Academic year 1956–1957	
TANNAKA, Tadao	Japan	Institute for Advanced Study	Sept. 23, 1955	July 1957
THOM, René	France	Institute for Advanced Study (Sept. 1956–Dec. 1956); Princeton University (Jan. 1957–Feb. 1957); University of Chicago (March 1, 1957–Aug. 31, 1957)	Sept. 1956	Aug. 31, 1957

Name	Home Country	Host Institution	Period of visit From	To
van der VAART, Hubertus	Netherlands	North Carolina State College	Jan. 1957	June 1957
von HAGENOW, Karl	Germany	Institute of Mathematical Sciences, N. Y. University	Sept. 1956	Sept. 1957
WALZ, Alfred	Germany	American University; National Bureau of Standards	Oct. 22, 1956	Nov. 3, 1956
WOOYENAKA, Y.	Japan	Harvard University	Sept. 1956	June 1957
YAMAURO, Sadayuki	Japan	Institute for Advanced Study	Sept. 1956	April 1957
ZIEGLER, H.	Switzerland	Brown University	Sept. 1956	June 1957
ZUBIETA, Gonzalo	Mexico	University of Chicago	Oct. 1, 1956	June 30, 1957

The Division of Mathematics welcomes information on present and future visits of mathematicians from abroad.

PERSONAL ITEMS

A research grant for the current academic year has been awarded by Fairleigh Dickinson University to Mr. Martin Lipschutz for work on a research problem in the field of applied mathematics.

Dr. W. W. Boone of the Institute for Advanced Study is at the Mathematical Institute of the University of Oslo on a Fulbright grant.

Dr. L. A. Rubel of Cornell University has been awarded a postdoctoral fellowship by the National Science Foundation, Washington, D. C.

Dr. J. W. Addison, Jr. of the University of Michigan is on leave of absence and is at the Institute for Advanced Study.

Mr. Eugene Albert of Brooklyn College has accepted a position as mathematical engineer with the General Electric Corporation, Schenectady, N. Y.

Professor Orhan Alisbah of Ankara University has been appointed to a visiting professorship at the University of Pennsylvania.

Dr. F. E. Alzofon of the Santa Barbara Research Center has accepted a position as senior research mathematician with the Stanford Research Institute, Menlo Park, California.

Professor R. V. Andree of the University of Oklahoma is on leave of absence and has been appointed to a visiting professorship at the Oklahoma Agricultural and Mechanical College.

Dr. Louis Auslander of the Institute for Advanced Study has been appointed to an assistant professorship at the University of Pennsylvania.

Dr. Maurice Auslander of the University of Michigan is on leave of absence and is at the Institute for Advanced Study.

Dr. W. E. Baxter of the University of Pennsylvania has been appointed to an assistant professorship at Ohio University.

Professor E. C. Blom of New York State Teachers College has been appointed to an associate professorship at Beaver College.

Dr. Fred Brafman of Wayne State University has been appointed to an assistant professorship at Southern Illinois University.

Associate Professor J. L. Brenner of the State College of Washington has accepted a position as mathematician with the Stanford Research Institute.

Dr. N. A. Brigham of Johns Hopkins University has accepted a position as senior scientist with the Avco Manufacturing Corporation, Lawrence, Massachusetts.

Dr. F. E. Browder of Brandeis University has been appointed to an assistant professorship at Yale University.

Mr. H. H. Brown of the Franklin Institute has accepted a position as mathematician on the Technical Staff of the Ramo-Wooldridge Corpora-

tion, Los Angeles, California.

Associate Professor C. E. Burgess of the University of Utah has been appointed a visiting lecturer at the University of Wisconsin.

Dr. R. G. Buschman of the University of Colorado has been appointed to an associate professorship at the University of Wichita.

Mr. R. W. Butcher of the University of Michigan has accepted a position as actuarial analyst with the Travelers Insurance Company, Hartford, Connecticut.

Assistant Professor H. E. Campbell of Emory University has been appointed to an assistant professorship at Michigan State University.

Professor K. L. Chung of Syracuse University has been appointed to a visiting professorship at the University of Chicago.

Associate Professor O. C. Collins of the University of Nebraska is on leave and has accepted a position as resident consultant with General Mills, Incorporated, Minneapolis, Minnesota.

Associate Professor S. D. Conte of Wayne State University is on leave of absence at Ramo-Wooldridge Corporation, Los Angeles, California.

Dr. Frederic Cunningham, Jr. of the University of New Hampshire has been appointed a lecturer at Bryn Mawr College.

Assistant Professor Anne C. Davis of the University of Washington has been appointed to an assistant professorship at the University of California, Davis.

Dr. Martin D. Davis of Ohio State University has been appointed to an assistant professorship at Rensselaer Polytechnic Institute, Hartford Graduate Center.

Dr. R. L. Davis of the University of Michigan has been appointed to an assistant professorship at the University of Virginia.

Mr. H. F. DeFrancesco of the National Security Agency has accepted a position as fellow engineer with Westinghouse Electric Corporation, Baltimore, Maryland.

Assistant Professor W. E. Deskins of Ohio State University has been appointed to an assistant professorship at Michigan State University.

Associate Professor Avron Douglis of New York University has been appointed to a visiting research professorship at the Institute for Fluid Dynamics and Applied Mathematics, University of Maryland.

Assistant Professor J. A. Englund of Creighton University has accepted a position as operations analyst with the Offutt Air Force Base, Nebraska.

Dr. R. A. Eubanks of the American Machine and Foundry Company has accepted a position as research scientist with Borg Warner Corporation, Des Plaines, Illinois.

Dr. Jacqueline P. Evans of Smith College has been appointed to an assistant professorship at Wellesley College.

Professor H. S. Everett of the University of Chicago is on leave of absence and has been appointed to a visiting professorship at Pennsylvania State University.

Assistant Professor Chester Feldman of Purdue University has been appointed to an assistant professorship at the University of New Hampshire.

Dr. Jacob Feldman of the Institute for Advanced Study has been appointed to a visiting professorship at Columbia University.

Dr. F. G. Fisher of the Navy Electronics Laboratory, San Diego, has accepted a position as consulting mathematician with the U.S. Navy Bureau of Ordnance, Washington, D. C.

Dr. H. K. Flesch of Cornell University has accepted a position as project engineer with the Federal Telecommunication Laboratories, Nutley, New Jersey.

Professor K. W. Folley of Wayne State University is on leave of absence and has been appointed to a visiting professorship at the United States Naval Postgraduate School, Monterey, California.

Miss Joyce B. Friedman of ACF Electronics has accepted a position as mathematician with Technical Operations, Inc., Washington, D. C.

Dr. T. M. Gallie, Jr. of the Humble Oil and Refining Company has been appointed to an assistant professorship at Duke University.

Professor Abolghassem Ghaffari of Teheran University has accepted a position as mathematician with the National Bureau of Standards, Washington, D. C.

Dr. J. E. Gibbs of the Royal Observatory of Scotland has accepted a position as senior scientific officer with the National Physical Laboratory, Teddington, Middlesex, England.

Mr. T. L. Gibson, Jr. of International Business Machines Corporation is on leave of absence and is at Carnegie Institute of Technology.

Dr. A. J. Goldman of Princeton University has accepted a position as mathematician with the National Bureau of Standards, Washington, D. C.

Mr. S. W. Golomb of Harvard University has accepted a position as senior research mathematician with the Jet Propulsion Laboratory of California Institute of Technology.

Mr. R. M. Gordon of the National Cash Register Company has accepted a position as sales technical specialist with the Electrodata Division of Burroughs Corporation, Pasadena, California.

Associate Professor Herbert Greenberg of Carnegie Institute of Technology has been appointed to an associate professorship at the Institute

of Mathematical Sciences, New York University.

Dr. Donald Greenspan of the University of Maryland has accepted a position as research engineer with Hughes Aircraft Company, Culver City, California.

Mr. D. S. Greenstein of the University of Pennsylvania has accepted a position as professional engineer with the Radio Corporation of America, Camden, New Jersey.

Dr. Heinrich Guggenheimer of the Hebrew University has been appointed to a professorship at Bar Ilan University, Israel.

Dr. H. M. Gurk of the University of Pennsylvania has accepted a position as mathematical analyst with the Radio Corporation of America, Camden, New Jersey.

Dr. N. A. Hall of New York University has been appointed to a professorship of mechanical engineering at Yale University.

Assistant Professor Mary-Elizabeth Hamstrom of Goucher College is on leave of absence and is at the Institute for Advanced Study.

Mr. W. J. Hardell of Michigan State University has accepted a position as mathematician with Remington-Rand Univac, St. Paul, Minnesota.

Mr. J. L. Hatfield of Mary Washington College has been appointed to an assistant professorship at the College of William and Mary.

Mr. Hugo Heermann of the National Advisory Committee for Aeronautics has accepted a position as mathematical engineer with Lockheed Aircraft Corporation, Burbank, California.

Dr. Sigurdur Helgason of Massachusetts Institute of Technology has been appointed a lecturer at Princeton University.

Mr. Leo Hellerman of Yale University has accepted a position as associate mathematician with International Business Machines Corporation, Poughkeepsie, New York.

Mr. Aaron Herschfeld of Polytechnic Institute of Brooklyn has been appointed to an assistant professorship at Canisius College.

Dr. I. R. Hershner, Jr. of the University of Vermont has accepted a position as mathematician with the research division of the Office of Chief of Research and Development, Washington, D. C.

Professor I. N. Herstein of the University of Pennsylvania is on leave of absence and is at Yale University.

Professor W. F. Hill of Howard Payne College has been appointed to a professorship at Tarleton State College.

Dr. Abraham Hillman of Columbia University has been appointed to an assistant professorship at Washington State College.

Mr. J. E. Hoffman of the University of Oklahoma has been appointed to an assistant professorship at Oklahoma Agricultural and Mechanical College.

Mr. W. A. Howard of the University of Chicago has accepted a position as mathematician with Bell Telephone Laboratories, Whippany, N.J.

Mr. Bernard Jacobson of Michigan State University has been appointed to an assistant professorship at Franklin and Marshall College.

Dr. M. J. Jacobson of Bell Telephone Laboratories has been appointed to an assistant professorship at Rensselaer Polytechnic Institute.

Dr. J. P. Jans of Yale University has been appointed to an assistant professorship at Ohio State University.

Associate Professor R. N. Johanson of Boston University has been appointed a lecturer at Wellesley College.

Mr. D. H. Jones of the University of Washington has accepted a position as scientist with the Westinghouse Atomic Power Division, Pittsburgh, Pennslyvania.

Dr. R. D. Johnson of the University of Virginia has been appointed to an assistant professorship at Georgia Institute of Technology.

Dr. W. B. Jurkat of the University of Tubingen, Tubingen, Germany is on leave and has been appointed to a visiting associate professorship at Ohio State University.

Assistant Professor L. H. Kanter of Clarkson College has been appointed to an assistant professorship at Drexel Institute of Technology.

Dr. Manfred Kochen of Harvard University has accepted a position as associate engineer with International Business Machines Corporation, Poughkeepsie, New York.

Dr. Masatake Kuranishi of the Institute for Advanced Study has been appointed to a visiting assistant professorship and research associateship at the University of Chicago.

Dr. Leo Lapidus of Michigan State University has accepted a position as senior research engineer with Convair, San Diego, California.

Mr. C. W. Leininger of the University of Texas has been appointed to an assistant professorship at Arlington State College.

Mr. A. J. Leino of Lemoore, California, has accepted a position as research engineer with Convair, San Diego, California.

Mr. H. L. Lewis of Southwest Texas State Teachers College has accepted a position as assistant mathematician with RAND Corporation, Santa Monica, California.

Dr. C. T. Long of the National Security Agency has been appointed to an assistant professorship at the State College of Washington.

Miss Ethelyne L. McBee of the University of Florida has been appointed to an associate professorship at Wesleyan College.

Dr. J. C. McCully of the University of Rhode Island has been appointed to an assistant professorship at Western Michigan College.

Dr. R. W. McKelvey of the University of Maryland has been appoint-

ed to an assistant professorship at the University of Colorado.

Dr. Arne Magnus of the University of Nebraska has been appointed to an assistant professorship at the University of Colorado.

Dr. Ella Marth-Snader of District of Columbia Teachers College has been appointed to a professorship at Chicago Teachers College.

Dr. A. D. Martin of the Institute for Advanced Study has been appointed to an assistant professorship at Carnegie Institute of Technology.

Professor R. A. Miller of the University of Mississippi has accepted a position as senior nuclear engineer with Convair, Fort Worth, Texas.

Dr. Josephine Mitchell of General Electric Company has accepted a position as research mathematician with Westinghouse Research Laboratory, East Pittsburgh, Pennsylvania.

Dr. R. A. Moore of Yale University has been appointed to an assistant professorship at Carnegie Institute of Technology.

Mr. J. T. Morse of North Attleboro, Massachusetts, has accepted a position as research mathematician with the Carter Oil Company, Tulsa, Oklahoma.

Assistant Professor E. D. Nering of the University of Minnesota has been appointed to an associate professorship at the University of Arizona.

Dr. J. C. C. Nitsche of the Technische Universitaet Berlin, Berlin-Charlottenburg, Germany, is on leave of absence and has been appointed to a visiting associate professorship at the University of Cincinnati.

Assistant Professor R. H. Oehmke of Butler University has been appointed to an assistant professorship at Michigan State University.

Dr. H. A. Osborn of the University of California, Berkeley, has been appointed to an assistant professorship at the University of Illinois.

Dr. J. B. O'Toole of the Philco Corporation has accepted a position as research physicist with the Hughes Research and Development Laboratories, Culver City, California.

Dr. G. K. Overholtzer of Georgia Institute of Technology has been appointed to an assistant professorship at the State College of Washington.

Dr. T. D. Oxley, Jr. of Purdue University has been appointed to an assistant professorship at Kansas State College.

Dr. Emanuel Parzen of Columbia University has been appointed to an assistant professorship at Stanford University.

Dr. Mary H. Payne of Columbia University has accepted a position as research engineer with Fairchild Guided Missiles Division, Wyandanch, New York.

Dr. W. H. Pell of the University of Maryland has accepted a position as mathematician with the National Bureau of Standards, Washington, D. C.

Dr. W. M. Perel of Georgia Institute of Technology has been appointed to an assistant professorship at Texas Technological College.

Dr. C. L. Perry, Jr. of the U. S. Naval Postgraduate School has been appointed head of the mathematics group at Stanford Research Institute, Menlo Park, California.

Dr. W. W. Peterson of International Business Machines Corporation has been appointed to an assistant professorship of electrical engineering at the University of Florida.

Mr. S. E. Puckette of Yale University has been appointed to an assistant professorship at the University of the South.

Dr. Ronald Pyke of the University of Washington has been appointed a research associate at Stanford University.

Dr. J. R. M. Radok of Brown University has accepted a position as mathematician with Shell Development Company, Emeryville, California.

Dr. L. B. Rall of Oregon State College has accepted a position as mathematician with the Shell Development Company, Emeryville, California.

Dr. R. W. Randall, Jr. of Purdue University has accepted a position as a scientific analyst with the Operations Evaluation Group, Alexandria, Virginia.

Dr. Bayard Rankin of Massachusetts Institute of Technology has been appointed to an assistant professorship at Case Institute of Technology.

Dr. O. W. Rechard of the Los Alamos Scientific Laboratory has been appointed to an associate professorship and directorship of the Computing Center at the State College of Washington.

Dr. R. A. Restrepo of California Institute of Technology has been appointed a lecturer at the University of British Columbia.

Dr. T. J. Rivlin of New York University has accepted a position as senior mathematical analyst with Fairchild Engine and Airplane Corporation, Deer Park, Long Island, New York.

Assistant Professor J. B. Roberts of Reed College is on leave of absence and has been appointed to a visiting assistant professorship at Wesleyan University.

Dr. G.-C. Rota of Yale University has been appointed a research assistant at the Institute of Mathematical Sciences, New York University.

Professor Helen G. Russell of Wellesley College is on sabbatical leave and is studying at Harvard University.

Associate Professor O. P. Sanders of Southeastern State College has been appointed to an assistant professorship at the University of Arkansas.

Dr. W. C. Sangren of Curtiss-Wright Research has accepted a position as chief of computing with the General Dynamics Corporation,

San Diego, California.

Associate Professor J. W. Sawyer of the University of Richmond has been appointed to an associate professorship at Wake Forest College.

Professor Peter Scherk of the University of Saskatchewan is on leave of absence and has been appointed to a visiting professorship at the University of Pennsylvania.

Associate Professor Alfred Schild of Carnegie Institute of Technology has accepted a position as advisory mathematician with Westinghouse Research Laboratories, Pittsburgh, Pennsylvania.

Dr. L. A. Schmittroth of Harvard University has been appointed to an assistant professorship at Montana State University.

Dr. Hans Schneider of Queen's University has been appointed to an assistant professorship at the State College of Washington.

Professor I. J. Schoenberg of the University of Pennsylvania is on leave of absence and is at Stanford University.

Mr. W. H. Shields of Radioplane Company has accepted a position as mathematician with the RAND Corporation, Santa Monica, California.

Associate Professor R. L. Shively of Manchester College has been appointed to an assistant professorship at Western Reserve University.

Assistant Professor J. R. Shoenfield of Duke University is on leave of absence and is at the Institute for Advanced Study.

Dr. D. T. Sigley of the American Machine and Foundry Company has accepted a position as chief engineer with the Firestone Tire and Rubber Company, Los Angeles, California.

Mr. G. F. Simmons of Yale University has been appointed to an assistant professorship at the University of Rhode Island.

Associate Professor Annette Sinclair of Southern Illinois University is on leave of absence and has been appointed a research fellow at Harvard University.

Dr. J. R. Sligo of the University of Nevada has been appointed to an assistant professorship of education at Ohio University.

Assistant Professor W. A. Small of Alfred University has been appointed to an assistant professorship at Grinnell College.

Dr. A. H. Smith of the University of Southern California has accepted a position as mathematician in the Computer Systems Division of the Ramo-Wooldridge Corporation, Los Angeles, California.

Mr. Malcolm Smith of Cook Research Laboratories has accepted a position as senior staff member with Motorola, Incorporated, Riverside, California.

Assistant Professor R. F. Smith of the University of Vermont has been appointed to a professorship at Teachers College at Oswego, State University of New York.

Dr. Andrew Sobczyk of Los Alamos Scientific Laboratory, University of California, has been appointed to a professorship at the University of Florida.

Assistant Professor Ivar Stakgold of Harvard University has accepted a position as mathematician with the Office of Naval Research, Washington, D. C.

Dr. R. D. Stalley of Fresno State College has been appointed to an assistant professorship at Oregon State College.

Dr. J. M. Stark of Massachusetts Institute of Technology has been appointed to a professorship at Lamar State College of Technology.

Dr. R. H. Stark of Knolls Atomic Laboratory has accepted a position as manager, mathematics and computation, Vallecitos Atomic Laboratory, General Electric Corporation, San Jose, California.

Dr. Peter Swerling of the RAND Corporation is on leave of absence and has been appointed to a research assistant professorship at the University of Illinois.

Professor Tadao Tannaka of Tohoku University is on leave and is at the Institute for Advanced Study.

Professor G. B. Thomas, Jr. of the Massachusetts Institute of Technology is on leave of absence and has been appointed to a visiting associate professorship of statistics at Stanford University.

Mr. P. H. Thrower of the University of Texas has accepted a position as applied science representative with the International Business Machines Corporation, Dallas, Texas.

Assistant Professor H. G. Tucker of the University of Oregon has been appointed to an assistant professorship at the University of California, Riverside.

Assistant Professor R. Z. Vause of Vanderbilt University has been appointed to an assistant professorship at the University of Kansas City.

Dr. E. A. Walker of the National Security Agency has been appointed to an assistant professorship at the University of Kansas.

Miss Marion I. Walter of Cornell University has been appointed to an assistant professorship at Simmons College.

Dr. H. C. Wang of the University of Washington has been appointed to a visiting associate professorship at Columbia University.

Mr. J. E. Warren of Pennsylvania State University has accepted a position as research engineer with the Gulf Research and Development Company, Harmarville, Pennsylvania.

Mr. R. E. Wild of the University of California, Los Angeles, has accepted a position as computer analyst with the Douglas Aircraft Company, Santa Monica, California.

Mr. J. C. Williams of the University of Kansas has accepted a posi-

tion as applied science representative with International Business Machines Corporation, Kansas City, Missouri.

Dr. Y. K. Wong of Princeton University has been appointed to a visiting associate professorship at Southern Illinois University.

Assistant Professor J. W. Wray of the University of Idaho has been appointed to an assistant professorship at Georgia Institute of Technology.

Dr. A. C. Zaanen of the Institute of Technology, Delft, Netherlands, has been appointed to a professorship at the University of Leiden, Leiden, Netherlands.

Associate Professor L. A. Zadeh of Columbia University is on leave of absence and is at the Institute for Advanced Study.

Mr. David Zeitlin of the University of Minnesota has accepted a position as mathematician with Remington-Rand UNIVAC, St. Paul, Minnesota.

Associate Professor J. L. Zemmer of the University of Missouri is on leave of absence and has been appointed a visiting fellow at Yale University.

The following promotions are announced:

Jerome Berkowitz, New York University, to an assistant professorship.

Eleazer Bromberg, New York University, to a professorship.

Y. W. Chen, Wayne State University, to a professorship.

B. M. Drucker, Georgia Institute of Technology, to an associate professorship.

Albert Edrei, Syracuse University, to a professorship.

C. C. Faith, Michigan State University, to an assistant professorship.

N. J. Fine, University of Pennsylvania, to a professorship.

W. T. Fishback, Ohio University, to an associate professorship.

W. H. Gottschalk, University of Pennsylvania, to a professorship.

A. A. Grau, University of Oklahoma, to a professorship.

Alex Heller, University of Illinois, to an associate professorship.

Samuel Karlin, Stanford University, to a professorship.

W. E. Koss, Texas Agricultural and Mechanical College, to an associate professorship.

Anne L. Lewis, The Woman's College of the University of North Carolina, to an associate professorship.

L. H. Loomis, Harvard University, to a professorship.

Jürgen Moser, New York University, to an assistant professorship.

R. H. Niemann, Worcester Polytechnic Institute, to an assistant professorship.

Irving Reiner, University of Illinois, to an associate professorship.

The following appointments to instructorships are announced:

California Institute of Technology: Dr. J. M. Gary; University of California, Berkeley: Dr. A. B. Novikoff; Calvin College: Dr. C. J. Sin[illegible] John Carroll University: Dr. Mary M. Neff; Concordia College: Mr. G. A. Heuer; University of Connecticut: Dr. E. T. Wong; Dartmouth College: Mr. J. B. Fraleigh; Indiana University: Dr. Richard Block; Johns Hopkins University: Dr. Gustave Solomon; University of Kansas: Miss Frances L. Wolfe; Kenyon College: Mr. David Ryeburn; Lehigh University: Mr. Costas Kassimatis; University of Maryland: Dr. John Raleigh; Massachusetts Institute of Technology: Dr. W. L. Baily, Jr., and Mr. W. B. Houston, Jr.; University of Miami: Mr. G. M. Fisher; University of Minnesota: Mr. L. R. Harper, Jr.; University of Nebraska: Mr. D. L. Guy, and Mr. M. L. Keedy; Ohio State University: Dr. Werner Gautschi; Princeton University: Dr. L. M. Sonneborn; Queens College: Dr. A. R. Amir-Moez; Reed College: Mr. J. D. Leadley; University of Rochester: Dr. M. H. Pearl; Rutgers University: Dr. R. E. Heaton; Smith College: Dr. Aubyn Freed; Stanford University: Mr. Solomon Feferman, and Dr. J. L. McGregor; Syracuse University: Dr. Lily M. Seshu; Tulane University: Dr. H. H. Corson, III; Victoria College: Mr. G. E. Cross; University of Virginia: Dr. R. P. Goblirsch; University of Wisconsin: Dr. Joshua Chover, and Dr. J. B. Kruskal.

Deaths:

Dr. F. C. Ferry of Hamilton College died on August 14, 1956 at the age of eighty-eight years. He had been a member of the Society for fifty-five years.

THE WE'RE SORRY DEPARTMENT

The following is a correction of the article which appeared on page 21 of the Personal Items of the October 1956 issue of the *Notices:*

"Professor J. J. Stoker, Jr., New York University, received the Dannie Heineman Prize of $5,000 for his two books, *Non-linear Vibrations* and *Theory of Water Waves*."

It was previously reported that Professor J. J. Stoker, Jr.'s institution was the University of Minnesota.

The Society regrets the error.

CATALOGUE OF LECTURE NOTES ON MATHEMATICS TOPICS

UNIVERSITY OF BRITISH COLUMBIA

The following item may be ordered from: U. B. C. Book Store, Vancouver 8, B. C., Canada. (Not available before January 15)

H. F. DAVIS and M. G. HUMPHREYS, *Linear algebra and analysis*, Parts 1 and 2. $2.00

BROWN UNIVERSITY

The following items may be ordered from: Brown University Press, Box A, Providence 12, Rhode Island

WILLIAM PRAGER, *Theory of structures*, 1945, 137 pp., mimeographed, unbound (only 50 copies left) 3.00

HANS REISSNER, *Graphical statics*, 1942, 66pp., mimeographed, unbound (only 5 copies left) 1.50

HANS REISSNER, *Hydrodynamical theory of propellers*. 1942, 52 pp., mimeographed, unbound (only 40 copies left) 1.50

CALIFORNIA INSTITUTE OF TECHNOLOGY

The following item may be ordered from: Department of Mathematics, California Institute of Technology, Pasadena, California

A. ERDÉLYI, *Operational calculus*, 114 pp. + ii 1.50

UNIVERSITY OF CHICAGO

The following items may be ordered from: Mathematics Lecture Notes, Eckhart Hall, University of Chicago, Chicago 37, Illinois

I. KAPLANSKY, *Rings of operators*, 53 pp. 1.00

S. LANG, *Algebraic geometry*, 144 pp. 2.00

G. W. MACKEY, *Theory of group representations*, 182 pp. 3.00

I. E. SEGAL, *Elementary particles*, 188 pp. 2.85

A. WEIL, *Fibre spaces*, 48 pp. 1.00

A. ZYGMUND, *Trigonometric interpolation*, 99 pp. 1.60

DUKE UNIVERSITY

The following item may be ordered from: Department of Mathematics, Duke University, Durham, North Carolina

J. R. SHOENFIELD, *The structure of locally compact groups*, 63 pp., unbound — $1.00

HARVARD UNIVERSITY

The following items may be ordered from: Harvard University, Mathematics Department, 2 Divinity Avenue, Cambridge 38, Massachusetts

LARS V. AHLFORS, *Variational methods in function theory*, 218 pp., — 2.00

RICHARD BRAUER and EDWIN WEISS, *Non-cummutative rings*, Part I, Approx. 200 pp., (Will be available about December 14) — 2.00

HAVERFORD COLLEGE

The following items may be ordered from: Mathematics Department, Haverford College, Haverford, Pennsylvania

ROBERT C. JAMES, *Combinatorial topology of surfaces*, 39 pp., A paper based on lectures given by A. W. Tucker while a Philips Visitor at Haverford College — .25

ROBERT C. JAMES, *Topological groups*, 55 pp., Lectures given by Deane Montgomery while a Philips Visitor at Haverford College — .25

INSTITUTE FOR ADVANCED STUDY

The following items may be ordered from: Building C, The Institute for Advanced Study, Princeton, New Jersey

P. T. BATEMAN et al., *Seminar on convex sets*, 88 pp. — 2.62

JEAN LERAY, *Hyperbolic differential equations*, 238 pp. — 4.16

MARSTON MORSE, *Introduction to analysis in the large*, 191 pp. — 3.76

CARL L. SIEGEL, *Lectures on the analytical theory of quadratic forms*, 239 pp. — 3.66

OSWALD VEBLEN and JOHN von NEUMANN, *Geometry of complex domains*, 259 pp. — 4.20

HERMAN WEYL, *The structure and representation of continuous groups*, 210 pp. — 4.01

THE JOHNS HOPKINS UNIVERSITY

The following item may be ordered from: The Johns Hopkins Bookstore, Baltimore 18, Maryland

C. L. SIEGEL, *Topics in celestial mechanics*, ii + 237 pp., Similar to, but not identical with, the author's *Vorlesungen über Himmelmechanik* (1956). $3.50

UNIVERSITY OF KANSAS

The following items may be ordered from: Student Union Bookstore University of Kansas, Lawrence, Kansas

ARTHUR H. KRUSE, *Introduction to the theory of block assemblages and related topics in topology*, viii + 306 pp., multilithed, paperbound; research grant NSF-G 1126, report No. 6 3.00

W. R. SCOTT, CALVIN V. HOLMES and ELBERT A. WALKER, *Contributions to the theory of groups*, 129 pp., multilithed, paperbound; research grant NSF-G 1126, report No. 5 2.00

UNIVERSITY OF MARYLAND
INSTITUTE FOR FLUID DYNAMICS & APPLIED MATHEMATICS

The following items may be ordered from: Bookstore, University of Maryland, College Park, Maryland

L. DRYDEN, *Some aspects of transition from laminar to turbulent flow*, 30 pp. .65

S. GOLDSTEIN, *Some developments of boundary layer theory in hydrodynamics*, 27 pp. .80

WILLIAM PRAGER, *On limiting states of deformation*, 12 pp. .40

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

The following items may be ordered from: Technology Store, 40 Massachusetts Ave., Cambridge 39, Massachusetts

W. HUREWICZ, *Ordinary differential equations in the real domain*, 129 pp., (A slightly revised edition of Hurewicz' Brown notes will be available in limited quantity around Jan. 1) 1.25

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Alexandroff, P. S., Markuschewitsch, A. I., and Chintschin, A. J. *Enzyklopädie der Elementarmathematik.* Vol. II. *Algebra.* Berlin, VEB Deutscher Verlag der Wissenschaften, 1956. 9 + 405 pp.

Baldassarri, M. *Algebraic varieties.* Berlin, Springer, 1956. 9 + 195 pp. 36 DM.

Barbilian, D. *Teoria aritmetica a idealelor (în inele necomutative).* [Arithmetic theory of ideals (in non-commutative rings).] Editura Academiei Republicii Populare Romîne, 1956. 379 pp. 15.35 Lei.

Bharucha-Reid, A. T. See Kologorov, A. N.

Bieberbach, L. *Einführung in die Theorie der Differentialgleichungen im reellen Gebiet.* Berlin, Springer, 1956. 8 + 281 pp. 29.80 DM.

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Bodewig, E. *Matrix calculus.* Amsterdam, North-Holland, 1956. 12 + 334 pp. 26.50 guilders.

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Chu, W. H. See Goldstein, S.

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Dijksterhuis, E. J. *The first book of Euclidis elementa.* (Textus Minores, Vol. 20.) Leiden, Brill, 1955. 59 pp. 3.25 guilders.

Dryden, H. L. *Some aspects of transition from laminar to turbulent flow.* (Institute for Fluid Dynamics and Applied Mathematics, Lecture Series no. 34.) College Park, University of Maryland, 1955. 39 pp.

Eulerus. L. *Opera Omnia.* Series 2. *Opera mechanica et astronomica.* Vol. XIII. *Commentationes mechanicae ad theoriam corporum fluidorum pertinentes.* Ed. by C. A. Truesdell. Lausanne, Societatis Scientiarum Naturalium Helveticae, 1955. 118 + 375 pp. $12.50.

Forbes, G. F. *Digital differential analyzers.* 3d ed. Pacoima, Calif., 1956. 12 + 154 + 8 + 4 + 4 + 3 + 9 pp. $7.50.

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Hirsch, K. A. See Kurosh, A. G.

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Memoirs of the unifying study of the basic problems in engineering sciences by means of geometry. Vol. I. K. Kondo, Chairman. Tokyo, Gakujutsu Bunken Fukyu-Kai, 1955. 15 + 590 pp. $12.50.

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Newman, J. R. *The world of mathematics.* A small library of the literature of mathematics from A'h-mosé the Scribe to Albert Einstein, presented with commentaries and notes. New York, Simon and Schuster, 1956. 4 vols. 18 + 2535 pp. $20.00

Nitto, S. *The fundamental study of mathematics.* Tokyo, Maruzen, 1956. 83 pp. $1.50.

Niven, I. *Irrational numbers.* (Carus Mathematical Monographs, no. 11.) The Mathematical Association of America. New York, Wiley, 1956. 12 + 164 pp. $3.00.

Onicescu, O., Mihoc, G., and Ionescu Tulcea, C. T. *Calculul probabilităţilor şi aplicaţii.* [The calculus of probability and its applications.] Editura Academiei Republicii Populare Romine, 1956. 787 pp. 26.30 Lei.

Pai, S. I. See Goldstein, S.

Prager, W. *On limiting states of deformation.* (Institute for Fluid Dynamics and Applied Mathematics, Lecture Series no. 32.) College Park, University of Maryland, 1956. 12 pp.

Proceedings of the Conference on Differential Equations held at the University of Maryland March 17, 18 and 19, 1955. College Park, University of Maryland, 1956. $8.00.

Scheffers, G. *Wie findet und zeichnet man Gradnetze von Land- und Sternkarten?* 2d ed., rev. and enlarged by K. Strubecker. Stuttgart,

Teubner, 1956. 114 pp.

Séminaire Henri Cartan de l'Ecole Normale Supérieure, 1949/1950. Espaces fibrés et homotopie. 2d ed. Paris, Secrétariat mathématique, 1956. 3 + 149 pp.

Siegel, C. L. *Vorlesungen über Himmelsmechanik.* Berlin, Springer, 1956. 9 + 212 pp. 29.80 DM.

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Stepanow, W. W. *Lehrbuch der Differentialgleichungen.* Berlin, VEB Deutscher Verlag der Wissenschaften, 1956. 9 + 470 pp.

Strubecker, K. See Scheffers, G.

Suzuki, M. *Structure of a group and the structure of its lattice of subgroups.* Berlin, Springer, 1956. 96 pp. 16.50 DM.

Tranter, C. J. *Integral transforms in mathematical physics.* London, Methuen; New York, Wiley, 1956. 9 + 133 pp. $2.00.

Truesdell, C. A. See Eulerus, L.

Vol'pert, G. A. See Šlihting, G.

Weber, E. *Linear transient analysis.* Vol. II. New York, Wiley, 1956. 14 + 452 pp. $10.50.

Weyl, H. *Symmetrie.* Basel, Birkhäuser, 1955. 157 pp. 17.70 DM.

Wilkes, M. V. *Automatic digital computers.* New York, Wiley, 1956. 305 pp. $7.00.

Wilson, C. *William Heytesbury: Medieval logic and the rise of mathematical physics.* Madison, University of Wisconsin Press, 1956. 11 + 219 pp. $4.00.

Witte, E. See Macintyre, S.

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A reservation form for the Rochester meeting appears below.

Dormitory accommodations for members and guests are available in the Women's Residence Hall, beginning at 4:00 P.M. Wednesday. Prices of rooms per person are as follows: Single: $3.50 first night, $2.50 each additional night; Double: $3.00 first night, $2.00 each additional night.

The price for the banquet (Friday, December 28) will be $3.50 per person.

Reservations are to be mailed to Professor Norman G. Gunderson, Department of Mathematics, University of Rochester, Rochester 20, New York, and should reach Rochester by December 10, or as soon thereafter as possible.

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AMERICAN MATHEMATICAL SOCIETY

Rochester Meeting, December 27–29, 1956

RESERVATION FORM

Name and Institution _____

Arrival Date: Dec. ____at ____ A.M./P.M. Departure Date: Dec. ____at ____ A.M./P.M.

Dormitory accommodations required: _____men, _____women

_____single rooms, _____double rooms (in multiples of ½)
(Most single persons will have to share double rooms.)

_____reservations requested for banquet Friday evening

(_____fish dinners, _____meat dinners).

Please mail in time to reach Rochester by December 10, or as soon thereafter as possible.